

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 64-067246

(43)Date of publication of application : 13.03.1989

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(51)Int.Cl.

B01J 8/06

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(21)Application number : 62-225054

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(22)Date of filing : 08.09.1987

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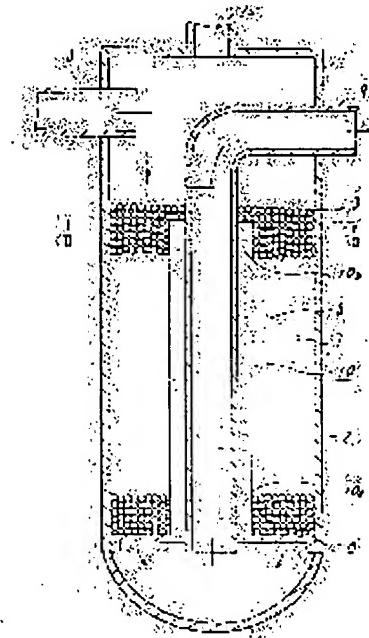
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## (54) REACTOR

### (57)Abstract:

**PURPOSE:** To utilize sensible heat of high temperature gas passing through inside an inner tube by disposing an endothermic section on the high temperature gas introducing side of the inner tube and an exothermic section of the raw material gas introducing side of a catalyst layer and providing a plurality of heat pipes in which operating liquid is enclosed.

**CONSTITUTION:** A catalyst layer 7 having a double tube structure consisting of an outer tube 2 and an inner tube 6 and filled with catalyst 3 in an annular space formed between the outer tube 2 and the inner tube 6 is formed, and raw material gas introduced into the outer tube 2 and passing through the catalyst layer 7 is discharged out through the inside of the inner tube 6. An endothermic section 10a is provided on the high temperature gas introducing side of the inner tube 6 in a plurality of heat pipes 10 in which operating liquid (example: cesium) is enclosed, while an exothermic section 10b is provided on the raw gas introducing side of the catalyst layer 7. As a result, sensible heat of high temperature gas passed through the catalyst layer is not thrown away uselessly, but can be utilized effectively.



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## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application]

converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]